UNITED STATES PATENT AND TRADEMARK OFFICE

NOTICE OF ALLOWANCE AND FEE(S) DUE

| 35525 | 7590 | 05/18/2009 |

IBM CORP (YA)
C/O YEE & ASSOCIATES PC
P.O. BOX 802333
DALLAS, TX 75380

EXAMINER
DINH, KHANH Q

ART UNIT	PAPER NUMBER
2451	

DATE MAILED: 05/18/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,983	11/13/2003	Boaz Carmeli	IL920030009US1	1536

TITLE OF INVENTION: ATTENTIVENESS MONITORING IN MULTICAST SYSTEMS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	08/18/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: <u>Mail</u>

Mail Stop ISSUE FEE
**Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450**
or <u>Fax</u> (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

35525   7590   05/18/2009

IBM CORP (YA)
C/O YEE & ASSOCIATES PC
P.O. BOX 802333
DALLAS, TX 75380

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

_____ (Depositor's name)

_____ (Signature)

_____ (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,983	11/13/2003	Boaz Carmeli	IL920030009US1	1536

TITLE OF INVENTION: ATTENTIVENESS MONITORING IN MULTICAST SYSTEMS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	08/18/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
DINH, KHANH Q	2451	709-235000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE   (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:

❑ Issue Fee

❑ Publication Fee (No small entity discount permitted)

❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

❑ A check is enclosed.

❑ Payment by credit card. Form PTO-2038 is attached.

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

❑ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.   ❑ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____   Date _____

Typed or printed name _____   Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,983	11/13/2003	Boaz Carmeli	IL920030009US1	1536

			EXAMINER
35525	7590	05/18/2009	DINH, KHANH Q

IBM CORP (YA)
C/O YEE & ASSOCIATES PC
P.O. BOX 802333
DALLAS, TX 75380

ART UNIT	PAPER NUMBER
2451	

DATE MAILED: 05/18/2009

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1373 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1373 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

	Application No.	Applicant(s)
Notice of Allowability	10/713,983	CARMELI ET AL.
	Examiner	Art Unit	
	Khanh Q. Dinh	2451	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *3/20/2009*.

2. ☒ The allowed claim(s) is/are *13,14,17-19,41,42,44-48 and 50-52*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

       1. ☐ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

       3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

       1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

/Khanh Q Dinh/
Primary Examiner, Art Unit 2451

<div align="center">**EXAMINER'S AMENDMENT**</div>

1.   An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with

Peter B. Manzo (the Undersigned Attorney, Reg. No.54,700) on 5/1/2009.

The application has been amended as follows:

<u>IN THE CLAIMS</u>:

Please **cancel** claims 1-12, 15, 16, 20-40, 43, 49.

Please **replace** claims as follows:

1-12. (Canceled)

13. (Currently Amended) A method of sending packets to a multiplicity of subscribers in a

multicast subscription system via a network, the method comprising:

monitoring by an attentiveness monitor in a message sender an activity at a negative

acknowledgement server for recent receipt of negative acknowledgements from one or more

of said multiplicity of subscribers indicating that one or more packets in a sequence of

packets are missing from a transmission via said network; and

responsive to not recently receiving any negative acknowledgements at said negative

acknowledgement server from said multiplicity of subscribers, disturbing said attentiveness

monitor in said message sender a flow of data between a packet sender and said multiplicity

of subscribers over said network by creating a negative acknowledgement generation

incident that intentionally causes one or more of said multiplicity of subscribers to send a

negative acknowledgement to said negative acknowledgement server to indicate that one or

more packets in said sequence of packets are missing, wherein said negative

acknowledgement generation incident comprises altering sent and pending packet queues by

generating an empty packet with only a header and no data payload within said sequence of

packets, placing said sequence of packets that includes said empty packet in said pending

packet queue, transmitting said sequence of packets in said pending packet queue to said

multiplicity of subscribers except said empty packet, and placing said sequence of packets

that includes said empty packet not transmitted in said sent packet queue.

14. (Previously Presented) The method according to claim 13, wherein said monitoring

includes determining whether or not there are attentive subscribers from said activity at said

negative acknowledgement server.

15. (Canceled)

16. (Canceled)

17. (Previously Presented) The method according to claim 13, wherein said negative

acknowledgement generation incident comprises intentionally skipping transmission of a

packet in said sequence of packets and placing said packet that was never transmitted to said

multiplicity of subscribers in a sent queue.

18. (Previously Presented) The method according to claim 13, wherein said negative

acknowledgement generation incident comprises altering a packet sequence number.

19. (Previously Presented) The method according to claim 13, wherein said negative

acknowledgement generation incident comprises incrementing a packet sequence number

relative to said sequence of packets that actually need to be sent.

20-40. (Canceled)

41. (Currently Amended) An apparatus for sending packets to a multiplicity of subscribers in

a multicast subscription system via a network, comprising:

a machine, wherein the machine includes a storage device that tangibly embodies a program

of instructions that when executed by the machine cause the machine to monitor an activity

at a negative acknowledgement server for recent receipt of negative acknowledgements from

one or more of said multiplicity of subscribers indicating that one or more packets in a

sequence of packets are missing from a transmission via said network; and disturb a flow of

data between a packet sender and said multiplicity of subscribers over said network by

creating a negative acknowledgement generation incident that intentionally causes one or

more of said multiplicity of subscribers to send a negative acknowledgement to said negative

acknowledgement server to indicate that one or more packets in said sequence of packets are

missing in response to not recently receiving any negative acknowledgements at said

negative acknowledgement server from said multiplicity of subscribers, wherein said

negative acknowledgement generation incident comprises altering sent and pending packet

queues by generating an empty packet with only a header and no data payload within said

sequence of packets, placing said sequence of packets that includes said empty packet in said

pending packet queue, transmitting said sequence of packets in said pending packet queue to

said multiplicity of subscribers except said empty packet, and placing said sequence of

packets that includes said empty packet not transmitted in said sent packet queue.

42. (Previously Presented) The apparatus according to claim 41, wherein said monitoring

includes determining whether or not there are attentive subscribers from said activity at said

negative acknowledgement server.

43. (Cancelled)

44. (Previously Presented) The apparatus according to claim 41, wherein said negative

acknowledgement generation incident comprises intentionally skipping transmission of a

packet in said sequence of packets and placing said packet that was never transmitted to said

multiplicity of subscribers in a sent packet queue.

45. (Previously Presented) The apparatus according to claim 41, wherein said negative

acknowledgement generation incident comprises altering a packet sequence number.

46. (Previously Presented) The apparatus according to claim 41, wherein said negative

acknowledgement generation incident comprises incrementing a packet sequence number

relative to said sequence of packets that actually need to be sent.

47. (Currently Amended) A computer product readable by a machine that tangibly embodies

a program of instructions stored in a computer readable storage medium which when

executed [[executable]] by the machine to perform a method for transmission of packets to a

multiplicity of subscribers in a multicast subscription system via a network, comprising:

monitoring by an attentiveness monitor in a message sender an activity at a negative

acknowledgement server for recent receipt of negative acknowledgements from one or more

of said multiplicity of subscribers indicating that one or more packets in a sequence of

packets are missing from a transmission via said network; and

disturbing by said attentiveness monitor in said message sender a flow of data between a

packet sender and said multiplicity of subscribers over said network by creating a negative

acknowledgement generation incident that intentionally causes one or more of said

multiplicity of subscribers to send a negative acknowledgement to said negative

acknowledgement server to indicate that one or more packets in said sequence of packets are

missing in response to not recently receiving any negative acknowledgements at said

negative acknowledgement server from said multiplicity of subscribers, wherein said

negative acknowledgement generation incident comprises altering sent and pending packet

queues by generating an empty packet with only a header and no data payload within said

sequence of packets, placing said sequence of packets that includes said empty packet in said

pending packet queue, transmitting said sequence of packets in said pending packet queue to

said multiplicity of subscribers except said empty packet, and placing said sequence of

packets that includes said empty packet not transmitted in said sent packet queue.

48. (Previously Presented) The computer product according to claim 47, wherein said

monitoring includes determining whether or not there are attentive subscribers from said

activity at said negative acknowledgement server.

49. (Cancelled)

50. (Previously Presented) The computer product according to claim 47, wherein said

negative acknowledgement generation incident comprises intentionally skipping transmission

of a packet in said sequence of packets and placing said packet that was never transmitted to

said multiplicity of subscribers in a sent packet queue.

51. (Previously Presented) The computer product according to claim 47, wherein said

negative acknowledgement generation incident comprises altering a packet sequence number.

52. (Previously Presented) The computer product according to claim 47, wherein said

negative acknowledgement generation incident comprises incrementing a packet sequence

number relative to said sequence of packets that actually need to be sent.

Allowable Subject Matter

2.   Claims 13-14, 17-19, 41, 42, 44-48, 50-52 are allowed.

Reason for allowance

3.   This communication warrants no examiner's reason for allowance, as applicant's reply

makes evident the reason for allowance, satisfying the record as whole as required by rule 37

CFR 1.104(e). In this case, the substance of applicant's remarks filed on 03/20/2009 with respect

to the added claim limitation point out the reason claims are patentable over the prior art of

record. Thus, the reason for allowance is in all probability evident from the record and no

statement for examiner's reason for allowance is necessary (see MPEP 13202.14).

Conclusion

5.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Dinh whose telephone number is (571) 272-3936. The examiner can normally be reached on Monday through Friday from 8:00 A.m. to 5:00 P.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, FOLLANSBEE JOHN, can be reached on (571) 272-3964.   The fax phone number for this group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Khanh Dinh/

Primary Examiner, Art Unit 2451